

# 5107

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Original

# 5107

Form 504 Ed. June, 1928	
DEPARTMENT OF COMMERCE	
U. S. COAST AND GEODETIC SURVEY	
R. S. Patton, Director	
U. S. COAST & GEODETIC SURVEY LIBRARY AND ARCHIVES	
APR 27 1931	
State: WASHINGTON	Acc. No.
DESCRIPTIVE REPORT	
<del>Topographic</del> Hydrographic	Sheet No. 5107 Field No. 21.
LOCALITY	
Pacific Coast	
<del>Olympic Peninsula</del>	
Cape Elizabeth to <del>Latitude 47°</del>	
<del>35°</del> N. Vicinity of Kalaloch Rks.	
1930	
CHIEF OF PARTY	
K. T. Adams	

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5107

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 21.

REGISTER NO. 5107

State Washington  
General locality ~~Olympic Peninsula~~ Pacific Coast  
Locality Cape Elizabeth to ~~latitude 47-35~~ Vicinity of Kalaloch Rks.  
Scale 1:20,000 Date of survey June - Aug., 1930  
Vessel U.S.C. & G.S.S. GUIDE.  
Chief of Party K. T. Adams  
Surveyed by Frank G. Johnson, John C. Mathisson  
Protracted by C. J. Beyma  
Soundings penciled by C. J. Beyma  
Soundings in fathoms ~~feet~~  
Plane of reference M.L.L.W.  
Subdivision of wire dragged areas by  
Inked by *Ed M. Bloom*  
Verified by *Ed M. Bloom*  
Instructions dated April 16, 1930  
Remarks:

DESCRIPTIVE REPORT  
to accompany

Hydrographic Sheet No. 21.  
Washington Coast  
1930.

AUTHORITY: DIRECTOR'S instructions dated April 16, 1930.

LIMITS: From Cape Elizabeth to a junction with Sheet No. 22, about Latitude  $47^{\circ}35'$  and off shore to a junction with the ship's hydrography.

SURVEY METHODS: Standard methods for launch hydrography were used. The work around Cape Elizabeth and all that close inshore was done by the ship's motorsailer. The lines in the deeper and less hazardous water were done by the 65 foot chartered launch SEAKIST. Practically all the sunken rocks and breakers were located by approaching them as closely as possible with the motorsailer, and locating them by sextant fixes, distance and bearing. Some were located by ranges from a fix position.

Lines were run parallel to shore in order to get the least depth with less amount of danger from breakers. Due to this, few ranges were used in running lines, the most part being run on compass courses, which made it quite difficult to run straight lines with the motor sailer, due to the rough water and inconsistency of the boat compass.

DISCREPANCIES: At Cape Elizabeth in Latitude  $47-21+790$  meters, longitude  $124-19+932$  meters a sounding of 4 feet was shown on the previous survey, but the least depth found here was 2 fathoms after a thorough investigation during both smooth and rough weather.

In latitude  $47-21+770$  meters, longitude  $124-20+206$  meters the previous survey shows a sounding of 3 feet, but the least depth found near here was a sounding of 2 fathoms - 5 feet after spending at least an hour investigating with hand lead.

A rock shown as awash in latitude  $47-21+845$  meters, longitude  $124-19+807$  meters was not found.

The mark on the photostat that appears as a sunken rock, latitude  $47-21+855$  meters, longitude  $124-19+987$  meters was investigated and not found to exist. There is some doubt as to whether this is supposed to be a sunken rock on the photostat.

The 21 and 30 foot soundings referred to in the instructions were not found after spending about 2 hours or so sounding around this area.

DESCRIPTIVE REPORT - Hydrographic Sheet No. 21 - 2.

The position of the 21 foot sounding as shown in the previous survey is latitude 47-21+1080 meters, longitude 124-20+890 meters. The least depth found near here was 4 fathoms - 5 feet.

The position of the 30 foot sounding as shown in the previous survey is latitude 47-21+995 meters, longitude 124-21. The least depth obtained near here was 7 fathoms - 2 feet.

The sunken reef, latitude 47-22+652 meters, longitude 124-20+950 meters on the old survey was found to be 130 meters to the southeast, to be of a small area, and awash at some stage of the tide (see smooth sheet). Sounding lines were run around it to get the exact limits.

The shoal sounding of  $6\frac{1}{2}$  fathoms shown on the old survey, latitude 47-28+1076 meters, longitude 124-23+780 meters was not found after having sounded in this area for half an hour. The least depth obtained was 10 fathoms - 4 feet.

**DANGERS:** The gravest danger on this sheet is Sea Lion Rock lying about  $2\frac{3}{4}$  miles off shore in latitude 47-27+05.6 meters, longitude 124-24+364.3 meters. This rock is about 8 feet above high water, 25 meters long on its largest axis and has deep water all around it. A ship must shape its course to pass well clear of this danger.

The close in area, around Cape Elizabeth to about 2 miles north of Willaughby Rock, is quite foul, containing reefs and rocks.

In latitude 47-23+1760 meters, longitude 124-21+942 meters a rock bare 1 foot at M.L.L.W. was found. This is the only new danger located of consequence. *Rock bare 3 ft at M.L.L.W. at highest point - per 92 f. mag.*

**COMPARISON WITH PREVIOUS SURVEYS:** Due to the poor control in the old survey a slight constant difference was found. With this exception and those noted under paragraph headed discrepancies the old survey and the new compare very well.

**GEOGRAPHIC NAMES:** See descriptive report for topographic sheet registered No. 4446, (1929)

Respectfully submitted,

*Frank G. Johnson*

Frank G. Johnson,  
Jr. H & G Engineer  
Steamer GUIDE.

Refer to:  
FGJ/s-012

Forwarded, approved:

*K. T. Adams*  
K. T. Adams,  
Commanding,  
Steamer GUIDE

# STATISTICS

Sheet No. 21.  
Washington Coast  
1930.

Day	Boat	No. Pos.	No Soundings	Stat. Mi.	Volume
a	Motorsailer	127	596	19.5	1
b	"	119	614	23.8	1
c	"	89	398	15.0	1 & 2
d	"	165	622	29.0	2
e	"	151	514	19.2	2 & 3
f	"	90	388	12.9	3
g	"	193	593	27.8	3
h	"	143	522	21.3	3 & 4
j	"	136	513	21.7	4
a	SEAKIST	96	333	18.0	1
b	"	33	114	6.9	1
c	"	25	115	5.4	1
d	"	52	271	17.3	1
e	"	26	105	6.3	1
f	"	36	176	11.0	1
g	"	12	29	1.4	1 & 2

VERIFICATION REPORT  
to accompany  
Hydrographic Sheet No. 21

This will certify that I have examined the completed smooth sheet and records and hereby approve same.

Most of the field work on this sheet was done by a hydrographic party working from the ship, so that the progress of the work was examined and discussed each evening with the officer in charge.

KTA/s

*K. T. Adams*

K. T. Adams,  
Commanding Officer,  
Steamer GUIDE.

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

## LANDMARKS FOR CHARTS

U.S.C. & G.S.S. GUIDE, Oakland, California.

**March 14,** \_\_\_\_\_, 19 **31**

SUPERINTENDENT, U. S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and should be charted:

K. T. Adams

-----  
Chief of Party.

[illegible]

A list of objects which are of sufficient prominence for use on the charts, together with a description of the same, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report. The selection, determination, and description of these points are of primary importance.

The description of each object should be short, but such as will identify it; for example, standpipe, water tower, church spire, tank, tall stack, red chimney, radio mast, etc. Generally, flagstaves and like objects are not sufficiently permanent to chart.

## Section of Field Records

Sheet No H 5107

Surveyed in 1930

Chief of Party, K.T. Adams

Surveyed by: Frank E. Johnson  
and John C. Mathison

Protracted by - C.J. Beyma

Soundings plotted by - C.J. Beyma

Verified and checked by -

E.C. McElrosson

1. The records conform to the requirements of the general instructions.
2. The plan and character of development fulfill the requirements of the general instructions.
3. The usual depth curves can be completely drawn within the limits of the sheet.

4. The field plotting was completed to the extent prescribed in the general instructions.

5. The office draftsman did not have to do over any part of drafting done by field party except as noted on the statistic sheet and the following changes.

The tide reduction had been changed in the sounding records which resulted in about six hundred changes on the smooth sheet. This sheet (H 5107) has many rocks and reefs and a number of changes had to be made in order to make them agree with the topographic sheet.

6. The sounding lines have been run in a north and south direction with the exception of shoal places and dangerous rocks. However in and around Cape Elizabeth we find plenty of cross lines and in this dangerous area we find the lines crossing in proper respect.

7. The junctions with adjacent sheets were found to be satisfactory. However the area around Cape Elizabeth will be studied by the reviewer and a report on this area will be made at that time.

8. Discrepancies:

In lot  $47^{\circ}34' + 1474m$  and long  $124^{\circ}22' + 30m$  there is a bare rock shown on the smooth sheet which is not shown on the boat sheet nor is it shown on the topographic sheet. In all probability this bare rock does not exist.

This rock has been removed from smooth sheet. Ground only C.P.P. A.T.S.

In lot  $47^{\circ}26' + 1031m$  and long  $124^{\circ}20' + 740m$  a rock awash is shown on H 5107 while on the topographic sheet 4446 a bare rock is shown.

In lot  $47^{\circ}26' + 256m$  and long  $124^{\circ}20' + 647m$  and lot  $47^{\circ}26' + 330m$  and long  $124^{\circ}20' + 752m$  there are two rocks shown on H 5107 respectively, while there is only one rock shown on the topographic sheet. In all probability only one rock exists.

On lat  $47^{\circ}25' + 291$  m and long  $124^{\circ}20' + 452$  and lat  $47^{\circ}25' + 361$  m and long  $124^{\circ}20' + 452$  there are two rocks shown on H5107. However on the topographic sheet only one rock is shown.

On lat  $47^{\circ}25' + 500$  m and long  $124^{\circ}20' + 1170$  m there are two rocks shown on H5107 and only one shown T 4446. In all probability only one rock exists.

In and around Cape Elizabeth we find a very rugged bottom. There are a number of discrepancies and I have left this open in order that the reviewer may decide upon the disposition of the existing questions in doubt.

A careful study must be made in this area and a comparison with the old hydrographic sheets will help; consequently I have left pencil notes on H5107 and will not endeavor to clean the sheet until it has been reviewed.

Respectfully submitted,  
E. M. Elson

Section of Field Records  
Report on Hydrographic Sheet No. 5107  
Cape Elizabeth to Vicinity of Kalalock  
Rocks, Coast of Washington  
Surveyed in 1930  
Hand lead soundings  
Instructions dated April 16, 1930. (Guide)

Chief of Party - K. T. Adams  
Surveyed by - F. G. Johnson, J. C. Mathisson  
Protracted and soundings plotted by - C. J. Beyma  
Verified and inked by - G. C. Mc Glasson

1. The records conform to the requirements except that not nearly enough bottom characteristics were entered. In volume No. 2 only one or two were recorded.
2. The plan, character and extent of the survey satisfy the specific instructions except that the distance between a few of the lines slightly exceeds the specified 200 meters and there are a few rocks and shoals shown on the old surveys, which were not verified and about which no recommendations were made.
3. There are no crossings except in the areas which were closely developed. Adjacent lines agree fairly well.
4. The information is sufficient for completely drawing the usual depth curves except the one fathom and zero curves close inshore.
5. The junction on the north with H-5108 is satisfactory. The off shore junction with H-5068 is satisfactory and the soundings agree well with the exception of the inshore line on H-5068 between Lat.  $47^{\circ}-25'$  and Lat.  $47^{\circ}-23'$ . This line appears to be about one fathom too deep and several soundings on it which cross shoaler depths on H-5107 were rejected.

From a point slightly north of Lat.  $47^{\circ}-23'$  to the southern limits of this sheet, this work overlaps the survey of 1927, H-4716. The work on both sheets is fairly close and it is hardly practical to attempt to combine all the soundings on one sheet, but the most critical soundings from H-4716 have been placed on H-5107 in red.

The shoal in Lat.  $47^{\circ}-22.3'$ , Long.  $124^{\circ}-20.7'$  was found to have been incorrectly shown on H-4716 and should be charted from H-5107.

A sounding of 4 feet is shown on H-4716 in Lat.  $47^{\circ}-21.45'$ , Long.  $124^{\circ}-19.75'$ . The least depth obtained here was a sound-

ing of 2 fathoms which was not plotted on H-5107 because it falls exactly over the 4 foot sounding from H-4716, which will be retained.

A sounding of 3 feet is shown on H-4716 in Lat.  $47^{\circ}-21.4'$ , Long.  $124^{\circ}-20.15'$ . The least depth obtained on the new work was a sounding of 2 fathoms and five feet, but as there is a possibility of the shoaler depth being missed with the lead, the 3 foot sounding will be retained.

The 21 and 30 foot soundings, referred to in the instructions, are shown on H-4716 about a mile and a quarter W.N.W. from Campe Elizabeth. While these were not found on the later survey, depths indicating a shoaling were obtained close to them and these soundings as well as a 38 foot sounding west of them will be retained on the chart.

A sunken rock shown on H-4716 in Lat.  $47^{\circ}-21.46'$ , Long.  $124^{\circ}-19.8'$  and a rock awash in Lat.  $47^{\circ}-21.45'$ , Long.  $124^{\circ}-19.65'$  were not added to H-5107 and need not be charted since the field party reports that they do not exist.

There is a rock awash shown on H-4716 in Lat.  $47^{\circ}-21.85'$ , Long.  $124^{\circ}-20.18'$ , for which there is no authority in the records of H-4716. This rock was shown on H-4716 because there are some rock symbols on the boat sheet of that sheet at that point. As there is nothing on the recent survey to disprove it, this rock has been added to H-5107 in red but it is doubtful if there is actually a rock there and an investigation and recommendation would have been desirable.

Other rocks, which were shown on H-4716 further inshore, were added to H-5107 although some of them are rather indefinitely located in the records of H-4716.

## 6. Comparison with Previous Surveys.

The old surveys of 1894 and 1898 shown on H-2202 and H-2201 compare fairly well with the new work. Some differences were noted and there are some slightly shoaler depths on the old sheets but on account of the poor control on old work, it is believed that this sheet H-5107 should completely supersede the old surveys with the exception of a sounding of  $4 \frac{5}{6}$  fathoms, shown on H-2201 in Lat.  $47^{\circ}-23.97'$ , Long.  $124^{\circ}-22.2'$ , which will be retained.

There is a  $6 \frac{1}{2}$  fathom sounding shown in pencil on H-2202 in Lat.  $47^{\circ}-28.6'$ , Long.  $124^{\circ}-23.6'$ , which was questioned in the records of H-2202. Several sounding lines run over this point failed to show any depth less than 10 fathoms and 4 feet and the removal of the  $6 \frac{1}{2}$  fathom sounding from Chart 6002 is recommended.

Several rocks fairly close inshore were added to H-5107 in blue from H-2202, H-2201 and T-1783.

7. The prescribed amount of field plotting was well done by the field party except that the figures used for the soundings were a little too large and sprawling. Changed tide reducers made a number of changes necessary in the office.

8. Character and scope of surveying

The character of the work is considered excellent and within the limits of the work the survey is fairly complete. A few more lines should have been run in the vicinity of Lat.  $47^{\circ}-21.7'$ , Long.  $124^{\circ}-20.3'$  in order to develop the shoalings shown on H-4716. The  $5 \frac{5}{6}$  fathom sounding approximately 600 meters west of Split Rock should have been a little further examined. Recommendations should have been made about the rocks shown on the old sheets, which were not shown on the new survey. For example rocks just west of Arch Island and the rock awash in Lat.  $47^{\circ}-26.5'$ , Long.  $124^{\circ}-21.1'$  from H-2202 and also the doubtful rock from H-4716 in Lat.  $47^{\circ}-21.85'$ , Long.  $124^{\circ}-20.17'$ .

9. Additional work within this area is hardly necessary unless some of the points mentioned in the preceding paragraph should be considered of enough importance to require it.
10. Reviewed by R. L. Johnston, January 13, 1932.

Sheet Inspected and recommendations approved by A. L. Shalowitz.

*App.*  
*A. M. Bohieralski*

8<sup>0</sup><sub>16</sub>

May 15, 1931

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in  
6 volumes of sounding records for

HYDROGRAPHIC SHEET 5107

Locality Vicinity of Kalaloch Rocks, Washington Coast

Chief of Party: K. T. Adams in 1930

Plane of reference is mean lower low water, reading

1.2 ft. on tide staff at Destruction Island

17.2 ft. below B. M. 1 (1930)

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

*Paul P. Whitney*

Chief, Division of Tides and Currents.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 5107

The following statistics will be submitted with the  
cartographer's report on the sheet:

Number of positions on sheet	1555-
Number of positions checked	360
Number of positions revised	8
Number of soundings recorded	6161
Number of soundings revised	208
Number of signals erroneously plotted or transferred	None

Date: 20 October, 1931  
Cartographer: E. M. Blarson